

Drafting Merit Badge Instructions

1. Create a new directory call Drafting MB on your hard drive.
2. Download the following files to your newly created directory done in Step 1:
 - quarter-inch-standard-graph-paper file, jpg file format
 - STEM blank border drawing, dxf file format
 - Completed STEM drawing, PDF file format
 - Counselor's version of Requirement 6, PDF file format
3. First make a back-up file copy in your new directory call 'STEM blank border drawing save'. This is in case the main file you're working on were to crash or gets corrupted. If that happens, then the file is likely no longer workable. Hence, the reason for a copy.
4. Print out the graph paper 3 times using the provided file you downloaded.
5. Using the graph papers and do **Requirement 1** for all. This can be done neatly with a black pen with no botches. It will be the only time using the pen. Then thereon out will be pencil. See Sample Copy 1.
6. Using first two graph papers completed from Requirement 1, create an electrical schematic, Bill of Material chart and fill in title block with your name for **Requirement 2 c**. See Sample Copy 2. 2nd graph paper is for Requirement 4 b which will be done at the Academy. Again, do both graph papers using pencil (avoid very sharp point).

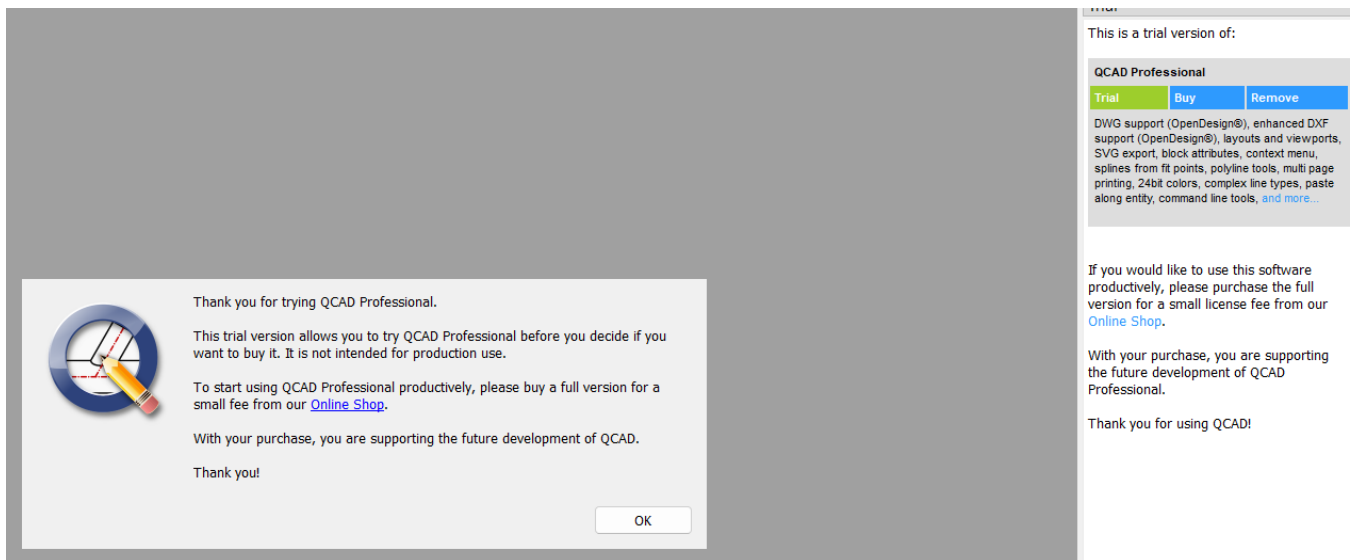
For all text lettering, you can draw two light parallel lines. Lettering must be neat.

7. Go to QCAD.org and download their free Trail version. Make sure you download this file version matching your operating system requirements. This is extremely important.
8. After the app is installed on your computer, it will place an icon on your desktop like this:



9. Upon opening QCAD app for the very first time, there will be a window pop-up asking what default drawing size to be. Go to drop down menu in that pop-up and select ANSA A (8 ½ x 11).
10. Take the time to watch either QCAD's tutorial or any from YouTube videos. Most important to know but not limiting to are: lines, delete (erase), text, save/quit.

11. Open up STEM blank border drawing file. You can either open this file from your directory or inside QCAD app. If you click on file directly from your directory, it will automatically open up QCAD app and loads up your file.
12. Play with the CAD file a bit to get a good feel for it. You can exit the drawing without saving any changes if desire to do so.
13. When you ready to do **Requirement 3c**, create exact same electrical schematic, fill in the Bill of Materials chart and add your name to DRAWN field with DATE completed. See Sample Copy 3 which is the PDF file you downloaded. This must be completed prior to the Academy as there will not be any computers available. Bring a print out of your complete CAD work on 8 ½ x 11 paper.
14. You can open and close drawing file many times as you want. You will see this pop up window on every time you open QCAD app:



Just click the OK button and ignore QCAD getting you to buy their Professional version. Recommendation keeping the opening and quit or save file to a minimum as possible.

15. For **Requirement 6**, write down your thoughts in advance on a separate piece of paper. Do much as you can prior to the Academy. We will then complete this requirement by transferring over your separate piece of paper over to the 3rd piece of paper at the Academy. Note only limited amount time will be spent on completing this requirement during our 2-hour session. See Counselor's version, Sample Copy 4.
16. Bring all of the following to the Academy:
 - two pencils
 - a firm eraser
 - something to sharpen your pencils
 - either 6 inch or 12 inch ruler
 - filled out worksheet as required by pre-reqs
 - completed two manual identical drawings
 - completed CAD drawing